CHAPTER 8

EVALUATING WILDLIFE HAZARD MANAGEMENT PROGRAMS AT AIRPORTS

This is the aftermath of a collision between a C-130 aircraft and a turkey vulture. (Photo courtesy USAF)

8.1 INTRODUCTION

Wildlife populations on and in the vicinity of airports are constantly changing in response to changes in land-use, state and federal management policies, and environmental factors. In addition, wildlife may adapt or habituate to control strategies that were once effective, or they may develop new behavioral or feeding patterns on or near the airport. New wildlife control technologies may become available, or established products or techniques may be withdrawn or banned. Finally, there may be changes in wildlife control and management personnel at an airport. Once a Wildlife Hazard Management Plan is in place, a process must be developed so the plan and the control programs implemented through the plan can be periodically evaluated and improved (14 CFR 139.337 [e][6]). This chapter outlines a means of such evaluations.

8.2 MONITORING AND RECORD KEEPING

The importance of accurate monitoring and record keeping cannot be overemphasized. Without consistently maintained records of wildlife activity, wildlife strikes and wildlife management actions, the proper evaluation of a program is impossible. Without evaluation, no assessment of the effectiveness of a program can be made. Furthermore, without accurate records and proper evaluation, it may be difficult or impossible to justify and defend certain management actions such as wildlife removal or to defend the airport during litigation in the aftermath of a damaging wildlife strike.

8.2.a Hazard Assessments, Plans, and Studies

As discussed in Chapter 7, each airport should have a designated location for all reference books such as wildlife field guides, videos, posters, and other training and educational materials. Copies of Wildlife Hazard Assessments, Wildlife Hazard Management Plans, and other relevant wildlife studies conducted at the airport should be available at this site for ready reference as needed. Ideally, this wildlife library should be located at the site where information on wildlife control activities and wildlife strikes is entered into logs, files and databases.

8.2.b Daily Log of Wildlife Control Activities

A daily log of wildlife activity and management actions should be maintained. Important factors to record include:

- Date, time and location on the airport where wildlife is observed;
- Species of wildlife and approximate numbers;
- Control actions taken and response of wildlife.

Airport runways, with unobstructed views and sun-warmed surfaces, provide ideal resting sites for birds such as these ring-billed gulls in Ohio, 1998. Bird patrol personnel need to quickly disperse birds that attempt to rest on runways and other airport pavements. (Photo by T. W. Seamans, USDA)

This information ideally should be recorded on a form (see Table 8-1 for example of daily log form) by wildlife control personnel at the site where the activity takes place. If a form is not available, the information may be recorded in a log book at the operations base.

The use of a standardized form or recording format, such as presented in Table 8-1, is strongly recommended. The information recorded will be most useful if it is summarized into monthly and annual statistics (see below). Use of a standardized format allows this

summarization to be easily done. The use of computerized database systems customized to provide summaries of wildlife control activities is recommended.

8.2.c Daily Log of Wildlife Strikes

Maintaining a consistent record of wildlife strikes is essential for defining the wildlife hazard level for an airport and for evaluating the airport's Wildlife Hazard Management Plan. In addition to maintaining these strike records for internal use at the airport, the strike reports should be mailed or transmitted electronically to the FAA to be incorporated into the National Wildlife Strike Database (Chapter 2).

Bird remains found within 200 feet of a runway centerline that show signs of interacting with aircraft, such as this laughing gull at an airport in New York in 1991, should be recorded as bird strikes. (Photo by R. A. Dolbeer, USDA)

As defined in the glossary, a wildlife strike is deemed to have occurred when:

1. A pilot reports striking 1 or more birds or other wildlife;

2. Aircraft maintenance personnel identify aircraft damage as having been caused by a wildlife strike;

3. Personnel on the ground report seeing an aircraft strike 1 or more birds or other wildlife;

4. Bird or other wildlife remains are found within 200 feet of centerline of a runway, unless another reason for the animal's death is identified;

5. The animal's presence on the airport had a significant negative effect on a flight (e.g., aborted takeoff or landing, high-speed emergency stop, aircraft left pavement area to avoid collision with animal).

Each strike event under categories 1-3 or 5 (reported strike) should be recorded on FAA Form 5200-7 (Appendix H) and mailed to the FAA (the form is pre-addressed and franked on the back side). Send photocopies of the form that do not have the address and frank on the back to:

Federal Aviation Administration
Office of Airport Safety and Standards, AAS-310
800 Independence Avenue, SW
Washington, DC 20591

Copies of this form (with the address and frank) can be downloaded and printed from **www.faa.gov/arp/hazard.htm.** The form also can be filled out and filed electronically at this site.

In filling out FAA Form 5200-7, include as much of the information requested as is available. Typically, not all information requested on the form will be available or known, but the report is valuable even if some information is missing.

For category 4 strikes (wildlife remains found but no report of strike), a log of these incidents should be maintained with the date, location, number and species of animals struck recorded (Table 8-2). A copy of this log should also be mailed to FAA monthly or these strikes should be reported individually on FAA Form 5200-7 with a notation that carcass was found but no strike was reported.

For all strike reports, every effort should be made to have the wildlife correctly identified to species. Species that cannot be readily identified should be frozen in a labeled bag until a local wildlife expert can be consulted. If only feather remains are available, they can be mailed in a sealed plastic bag to the address above for identification. Please include a copy of the strike report or other relevant information with the bird remains to assist the feather experts in identifying the bird.

8.2.d Records of Significant Management Actions Taken

A vegetation cover and mowing regime should be established at airports to minimize rodent populations and the production of seeds, insects, and forage desired by birds. (Photo by R. A. Dolbeer, USDA)

In addition to maintaining a daily log of wildlife control activities and wildlife strikes, it is important to keep records of other preventative management actions that may not be part of the daily routine of wildlife control. Examples of such actions might be installing or repairing fencing, thinning trees, clearing construction debris, applying insecticides or repellents, grass-height management, installing netting in hangars or wires over ponds, and regrading pavement to eliminate standing water. In addition, activities such as writing letters to catering services about proper storage of food waste are also important management actions. Documenting these activities in some type of summary file or table can aid in determining the total cost and effectiveness of the wildlife control program.

8.2.e Summary Reports by Month and Year

It may be necessary to control field rodents in some airport areas using appropriate rodenticides. This control activity should be recorded in the daily logs and noted on an airport map for future reference. (Photo courtesy USDA)

Information from the log of daily wildlife control activities and log of wildlife strikes should be summarized periodically to provide baseline data for analyzing and evaluating the wildlife control program. A logical approach is to conduct monthly summaries that are then incorporated into an annual report. These summaries do not need to be complex but should reflect the level of activity for the common control techniques deployed. For example, monthly summaries of pyrotechnics fired, runway sweeps to disperse birds and deer, distress call deployments, birds shot by species, and wildlife strikes by species would be useful (Table 8-3). A short paragraph could then outline other significant activities during the month such as repairing a fence or regrading an area to remove standing water. An annual report (Table 8-4) could then be easily developed by combining data from the monthly reports. It is emphasized that Tables 8-3 and 8-4 are only presented as examples to provide guidance in developing a format to summarize data. A particular airport might use methods not listed in Tables 8-3 and 8-4 such as falconry, radio-controlled model airplanes, dogs, or propane cannons. The important point is that there should be an objective, numerical documentation of wildlife control methods deployed and wildlife strikes occurring on the airport. The use of a computer database program can be extremely helpful in producing these summary reports.

8.2.f Training

A record of all training which wildlife control personnel have received should be maintained and summarized annually. This should include attendance at conferences, courses and workshops (e.g., firearms safety), self-study courses, and specialized on-the-job training.

8.3 ASSESSMENT OF WILDLIFE HAZARD MANAGEMENT PLAN

An airport's Wildlife Hazard Management Plan and the implementation of the plan should be reviewed annually by an outside wildlife biologist trained in wildlife damage control. The wildlife biologist might also include a subgroup of people from the Wildlife Hazard Working Group (see below) to assist in the review. Appendix J describes a simple system (modified from Seubert 1994) for assessing a Wildlife Hazard Management Plan at an airport. Five assessment categories are used to indicate the

adequacy of a Wildlife Hazard Management Plan and how well the plan is being implemented:

Category 1. Management functions related to wildlife hazards at or in the vicinity of the airport;

Category 2. Bird control at or in the vicinity of the airport;

Category 3. Mammal control at or in the vicinity of the airport;

Category 4. Management of habitat and food sources on airport property related to wildlife hazards;

Category 5. Land uses and food sources off airport property potentially related to wildlife hazards at the airport.

Within Categories 1-4 (activities on the airport), a series of elements are listed which are evaluated as either "Satisfactory", "Unsatisfactory", "Needs Improvement" or "Not Applicable". For Category 5 (off-airport attractants), the elements are scored on a scale of 0 (not present) to 3 (site creates significant wildlife hazard for airport, action should be taken). Those elements deemed "Unsatisfactory" or "Needs Improvement" (in Categories 1-4) or that are scored 2 or 3 (in Category 5) are then commented on in a summary form. The elements listed within each category are not intended to cover every possibility at every airport. The elements can be modified or expanded to meet situations unique to an airport.

Gulls and other birds are attracted to wetlands such as this depression located 200 feet from the end of a runway at a mid-western U.S. airport. (Photo by R. A. Dolbeer, USDA)

8.4 AIRPORT WILDLIFE HAZARDS WORKING GROUP

8.4.a Function

Wildlife hazard management at an airport often requires communication, cooperation and coordination among various groups on the airport and with various local, state and federal agencies and private entities. For many airports, the establishment of a Wildlife Hazards Working Group (WHWG) will greatly facilitate this communication, cooperation and coordination.

8.4.b Membership

The WHWG should include a representative from each of the key groups and agencies that have a significant involvement or interest in wildlife issues on the airport. Airport groups might include representatives from maintenance, operations, Air Traffic Control (ATC), and any fixed-base operators. Government agencies from outside the airport might include representatives from the state wildlife agency, U.S. Fish and Wildlife Service and USDA, Wildlife Services. Any facility near the airport that significantly attracts wildlife (such as a landfill or wildlife refuge) also should be represented.

An airport's Wildlife Hazard Working Group should meet at least annually or following a strike event that triggers a Wildlife Hazard Assessment (See Chapter 6). (Photo courtesy USDA)

The core WHWG usually should not exceed 10 people to keep meetings from becoming unwieldy. In addition to regular members, people with specialized knowledge, interest or concerns can be invited to meetings as appropriate. Typically, someone from airport management should chair the WHWG, or the chair can be rotated among groups.

8.4.c Meetings

The WHWG should meet at least annually for a general review of the overall wildlife hazard management program for the airport and to discuss special issues or problems as needed. The general review should include discussion of:

- Strike trends and significant strike events (based on data summarized using formats in Tables 8-3 and 8-4);
- Source of wildlife causing strike problems;
- Wildlife control activities (based on data and commentary summarized using formats in Tables 8-3 and 8-4);
- Wildlife Hazard Management Plan evaluation (based on most recent assessment using format in Appendix J).

Special issues to be discussed might include projected impacts of land-use changes on or near the airport, trends in populations or behavior of various species of wildlife, wildlife removal permits, evaluation of new wildlife control technologies, and clarification

of roles and responsibilities. A good way to end the meeting might be with a field demonstration of a control method or other management activity on the airport.

Special meetings of the entire WHWG or a subgroup may be needed after significant strike events or other developments affecting wildlife hazards if a regular meeting is not scheduled for the near future.

8.4.d Meeting Reports

The chairperson of the WHWG should arrange to have minutes or a summary report written for each meeting. This report should contain a list of attendees, decisions made by the group, deadlines and responsible parties for task assignments, and a list of critical issues that were not resolved.

8.5 SUMMARY AND CONCLUSIONS

All airport personnel should be trained to recognize and report wildlife hazards to the appropriate WHWG member. (Photo by E. A. LeBoeuf, USAF)

Periodic evaluations of an airport's Wildlife Hazard Management Plan and the activities undertaken to implement the plan are critical because of the dynamic nature of wildlife hazards and control technologies. The foundation for these evaluations is the maintenance of consistent records of wildlife control activities and wildlife strikes. The use of standardized formats for keeping these records, such as presented in Tables 8-1 to 8-4, permits easy compilation of events and activities into monthly and annual statistical and narrative summaries. Once these summaries are available, objective examinations and comparisons can be made of trends in strikes, wildlife activities, control methods deployed and other factors.

An objective, standardized format for assessing a Wildlife Hazard Management Plan and its implementation is presented in Appendix J. This format allows an outside biologist or group to systematically review the actions being taken and make recommendations in areas where improvement is needed. The availability of summary statistics such as provided through records maintained in Tables 8-1 to 8-4 is essential for this assessment.

Finally, the establishment of a WHWG provides an excellent means of improving communication, coordination, and cooperation among the diverse groups involved in wildlife hazard management on an airport. The WHWG also can provide an important

forum for reviewing, evaluating and improving an airport's wildlife hazard management program.

This page intentionally left blank.

Table 8-1. Example of daily log of wildlife control activities.

Airport_____

Date	Time	Location	Wildlife		Control method	Results/comments	Initials
			Species	No.			

This page intentionally left blank.

Table 8-2. Example of Wildlife Strike Log for recording bird or other wildlife remains found within 200 feet of runway centerline that, in the judgment of wildlife control personnel, were killed as a result of interacting with an aircraft.

Airport_____

Date	Time found	Species	Runway	Location on runway	Was strike reported?*	Comments

* If strike was reported, FAA Form 5200-7 should be filled out with details.

This page intentionally left blank.

Table 8-3. Example of form to provide monthly summary of wildlife control activities.

Airport_____ Month_____

Control activity (modify list as appropriate)	This month	Same month last year	Comments (list wildlife removed by species and method)
No. of pyrotechnics fired			
No. of times distress calls deployed			
No. of runway sweeps to clear birds or other wildlife			
No. of wildlife removed			
Miles driven by wildlife patrol			
No. of reported strikes			
No. of carcasses found (no strike reported)			

Summary paragraph of other wildlife control activities:

This page intentionally left blank.

Table 8-4. Example of form to provide annual summary of wildlife control activities derived from monthly reports (Table 8-3). Each airport's form should be modified to reflect the common control activities undertaken during the year.

Airport_____ Year_____

Month	No. of pyrotech-nics fired	No. of times distress calls deployed	No. of runway sweeps to clear birds or other wildlife	No. of wildlife removed[a]	Miles driven by wildlife patrol	No. of reported strikes[b]	No. of carcasses found (no strike reported)[b]	Comments
Jan								
Feb								
Mar								
Apr								
May								
Jun								
Jul								
Aug								
Sep								
Oct								
Nov								
Dec								
Total								

[a] Provide separate list by species and method.

[b] Provide separate list by species.

This page intentionally left blank.